

What is claimed is:

[Claim 1] 1. An improved front-end to body-side joint for an automotive vehicle, comprising:
an integral front end structure having a fender attachment portion and at least one hinge-reinforcement portion;
a fender coupled to said fender attachment portion of said integral front end structure;
and
a pillar member of a vehicle body coupled to said at least one hinge-reinforcement portion for mounting a door thereon;
wherein said integral front end structure is a master-locating component for positioning said fender and said door in a predetermined configuration.

[Claim 2] 2. The improved front-end to body-side joint as recited in claim 1 wherein said integral front end structure comprises at least one hydroformed tube.

[Claim 3] 3. The improved front-end to body-side joint as recited in claim 2 wherein said at least one hydroformed tube has a flattened end portion, said flattened end portion being said at least one hinge-reinforcement portion for attachment to said pillar member.

[Claim 4] 4. The improved front-end to body-side joint as recited in claim 2 wherein said at least one hydroformed tube includes a first hydroformed tube and a second hydroformed tube coupled to said first hydroformed tube, said first hydroformed tube and said second hydroformed tube respectively having a first flattened end portion and a second flattened end portion for attachment to said pillar member, said first flattened end portion and said second flattened end portion being spaced apart a predetermined distance.

[Claim 5] 5. The improved front-end to body-side joint as recited in claim 1 wherein said at least one hinge-reinforcement portion is coupled to an interior side of said pillar member.

[Claim 6] 6. The improved front-end to body-side joint as recited in claim 1 wherein said pillar member has at least one opening with said integral front end structure disposed therein.

[Claim 7] 7. The improved front-end to body-side joint as recited in claim 1 wherein said at least one hinge-reinforcement portion includes at least one of a hole, a weld nut, and an extrusion for attaching said pillar member to said at least one hinge-reinforcement portion.

[Claim 8] 8. The improved front-end to body-side joint as recited in claim 1 wherein said fender attachment portion includes at least one of a hole, a weld nut, and an extrusion for attaching said fender to said fender attachment portion.

[Claim 9] 9. An improved front-end to body-side joint for an automotive vehicle, comprising:

an integral front end structure having a fender attachment portion, a hood-hinge attachment portion, and at least one hinge-reinforcement portion;
a fender coupled to said fender attachment portion of said integral front end structure;
a hood hinge coupled to said hood-hinge attachment portion of said integral front end structure for attaching a hood thereto; and
a pillar member of a vehicle body coupled to said at least one hinge-reinforcement portion for attaching a door thereto;
wherein said integral front end structure is a master-locating component for positioning said fender, said hood, and said door in a predetermined configuration.

[Claim 10] 10. The improved front-end to body-side joint as recited in claim 9 wherein said integral front end structure comprises at least one hydroformed tube.

[Claim 11] 11. The improved front-end to body-side joint as recited in claim 10 wherein said at least one hydroformed tube has a flattened end portion, said flattened end portion being said at least one hinge-reinforcement portion for attachment to said pillar member.

[Claim 12] 12. The improved front-end to body-side joint as recited in claim 10 wherein said at least one hydroformed tube includes a first hydroformed tube and a second hydroformed tube coupled to said first hydroformed tube, said first hydroformed tube and said second hydroformed tube respectively having a first flattened end portion and a second flattened end portion for attachment to said pillar member, said first flattened end portion and said second flattened end portion being spaced apart a predetermined distance.

[Claim 13] 13. The improved front-end to body-side joint as recited in claim 9 wherein said at least one hinge-reinforcement portion is coupled to an interior side of said pillar member.

[Claim 14] 14. The improved front-end to body-side joint as recited in claim 9 wherein said pillar member has at least one opening with said integral front end structure disposed therein.

[Claim 15] 15. The improved front-end to body-side joint as recited in claim 9 wherein said at least one hinge-reinforcement portion includes at least one of a hole, a weld nut, and an extrusion for attaching said pillar member to said at least one hinge-reinforcement portion.

[Claim 16] 16. The improved front-end to body-side joint as recited in claim 9 wherein said fender attachment portion includes at least one of a hole, a weld nut, and an extrusion for attaching said fender to said fender attachment portion.

[Claim 17] 17. The improved front-end to body-side joint as recited in claim 9 wherein said hood-hinge attachment portion includes at least one of a hole, a weld nut, and an extrusion for attaching said hood hinge to said hood-hinge attachment portion.

[Claim 18] 18. An improved front-end to body-side joint for an automotive vehicle, comprising:

an integral front end structure having a fender attachment portion, a hood-hinge attachment portion, and at least one hinge-reinforcement portion;
a fender coupled to said fender attachment portion of said integral front end structure;
a hood hinge coupled to said hood-hinge attachment portion of said integral front end structure for attaching a hood thereto; and
a pillar member of a vehicle body coupled to said at least one hinge-reinforcement portion for attaching a door thereto;
wherein said integral front end structure is a master-locating component for positioning said fender, said hood, and said door in a predetermined configuration;
wherein said integral front end structure has a construction for providing a continuous load path to said vehicle body.

[Claim 19] 19. The improved front-end to body-side joint as recited in claim 18 wherein said integral front end structure extends substantially from said vehicle body to a front end of the automotive vehicle.

[Claim 20] 20. The improved front-end to body-side joint as recited in claim 18 wherein said integral front end structure comprises at least one hydroformed tube.